

PROGRAM facts

U.S. DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY

Gas Exploration, Production, and Storage

04/2003



CONTACT POINTS

Brad Tomer

Product Manager
Gas Exploration, Production
and Storage
304-285-4692
brad.tomer@netl.doe.gov

Charles M. Zeh

Division Director
Gas Supply Projects
304-285-4265
charles.zeh@netl.doe.gov

Gary Covatch

Project Manager
304-285-4589
gary.covatch@netl.doe.gov

STRATEGIC CENTER FOR NATURAL GAS WEBSITE

www.netl.doe.gov/scng



DRILLING, COMPLETION, AND STIMULATION

As ongoing gas production continues to deplete our shallow and conventional natural gas resources, sustained natural gas supply will increasingly depend on the domestic industry's ability to safely and economically drill, complete, and stimulate wells in deeper, higher temperature, higher pressure, and harder geologic environments. In addition, there are near-term industry needs to more efficiently drill and produce gas from conventional reservoirs to maximize productivity given limited rig, manpower, and service capacities. To address these needs, the DOE sponsors a wide range of research and development of new and improved technologies designed to allow cheaper, deeper, safer, and less damaging drilling in a wide range of environments. New technologies for the improved and more efficient completion and stimulation of wells are also being developed under this area.

Technologies currently being developed and demonstrated are:

- **Conventional Drilling System Efficiency**
 - Advanced mud hammer and hammer engine technologies
 - Optimization of mud hammer drilling performance
 - Downhole event recognition
- **New Concept Drilling System/Components**
 - High-pressure tubing jet assist drilling system
 - New aggressive TSP cutter design
 - Hydraulic pulse drilling system
 - Microwave processing for advanced diamond composites
 - Downhole seismic source for Pore Pressure Prediction
 - Laser drilling system
 - Composite drill pipe
 - High baud two-way telemetry system
- **Advanced Completion and Stimulation Systems**
 - Carbon dioxide/sand fracturing stimulation
 - Downhole fluid analyzer
 - Real time fracture diagnostics
 - Subsea separation system
 - Downhole power generation & wireless communication
 - Ultra-lightweight cement

DRILLING, COMPLETION, AND STIMULATION

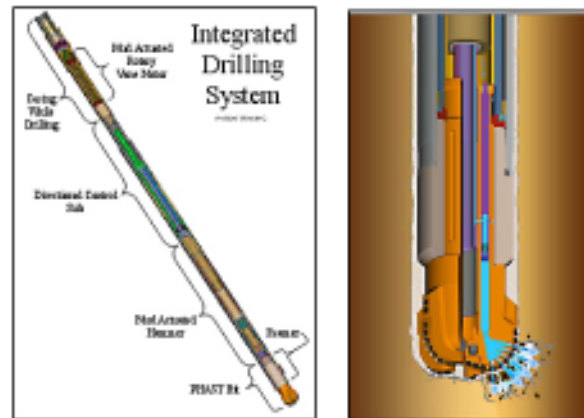
ADDRESS

National Energy Technology Laboratory

3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507-0880
304-285-4469 fax

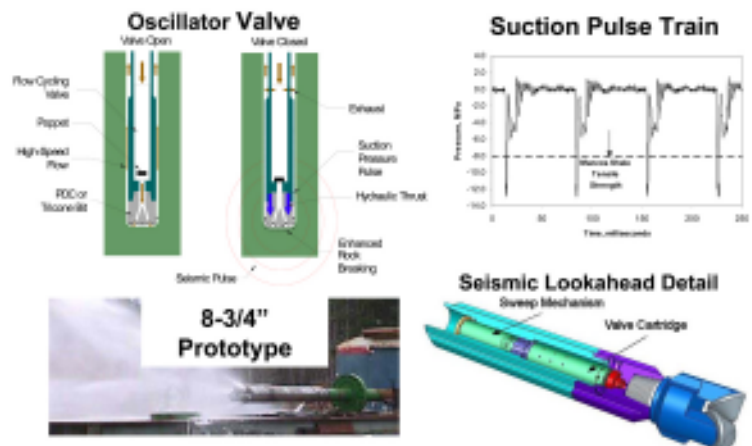
626 Cochran's Mill Road
P.O. Box 10940
Pittsburgh, PA 15236-0940
412-386-4604 fax

Advanced Mudhammer Project



<http://www.novatekonline.com/ids.html>

Mudpulse Drilling System



<http://www.tempresearch.com/hydropulse.htm>

High Speed Communications Up Drillpipe

